

THE IDB

Inter-American Development Bank • June 1997

Costa Rican microchips



Life sustaining

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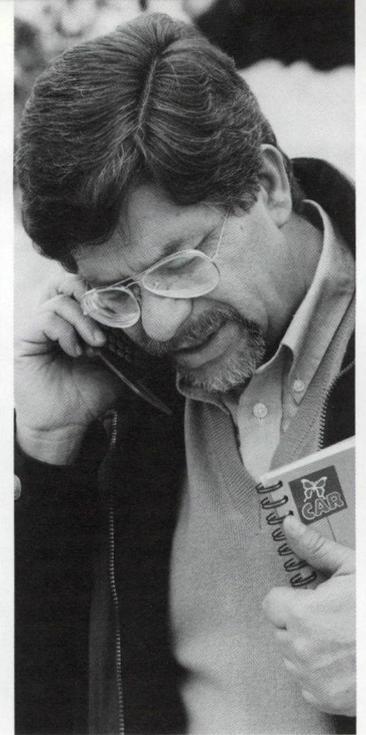
An exhibition at IDB headquarters shows the environmental benefits of the region's coral reefs and warns of their continuing destruction.



COVER PHOTO

Life sustaining

A nurse at the Regional Hospital of Valdivia, Chile, monitors a premature infant at the hospital's new 41-crib neonatal intensive care unit. Incubators in the unit were purchased last year as part of an IDB-financed expansion. See story on page 12. (IDB photo by Willie Heinz).



The Bank at a glance

The Inter-American Development Bank is an international financial institution established in 1959 to help accelerate economic and social development in Latin America and the Caribbean. The Bank has 28 member countries in the Western Hemisphere and 18 outside of the region.

In its 36 years of operations, the IDB has helped to finance projects that represent a total investment of more than \$206 billion. The Bank has also fostered a more equitable distribution of the benefits of development and has been a pioneer in financing social projects.

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Nobel Peace Prize winner Borlaug says that small farmers need access to credit to adopt new agricultural technology.

Credit, technology and agriculture

Mention the name Norman Borlaug, and you will probably get a blank stare. How is it that this 1970 Nobel Peace Prize winner—creator of the Green Revolution, a man credited with saving more human lives than any other person in history—is a virtual unknown except among fellow agronomists?

Perhaps it is because Borlaug's seminal accomplishments were made in what now seems like another era. Or because the Green Revolution has come under fire from environmentalists for its supposed dependence on chemical inputs. Or perhaps because Borlaug's achievements have removed the subject of mass starvation as an immediate threat, and with it, agriculture as a compelling problem.

Although the world seems to have forgotten Borlaug, this 83-year-old native of the U.S. state of Iowa remains on the front lines, teaching, fighting hunger, and dispensing pragmatic and occasionally iconoclastic advice to policymakers. He now spends much of his time in Africa, where he sees the biggest potential for improvement. But he continues to follow developments in Latin America, where he spent much of his career as a scientist at the IDB-supported International Maize and Wheat Improvement Center near Mexico City.

In a recent interview in Washington, D.C., Borlaug showed his

pragmatic views of the rural life. There is nothing romantic, he said, in "too many people trying to make a living off of land that is not suitable." Poor, thin soils and broken terrain that cannot be mechanized condemn millions to poverty.

Part of the solution lies with the cities and their ability to create jobs to draw immigrants from the countryside. For the people who remain on the land, technology can ensure that "we don't condemn those one-hectare farms to misery in perpetuity," Borlaug said.

Green Revolution founder says that technology alone will not help small farmers boost yields.

Borlaug is not talking about developing new technology. With off-the-shelf techniques, fertilizer and better seed, "there would be no problem in doubling, tripling, quadrupling production, he said. The challenge is getting this technology into the hands of the farmers.

"We don't like to talk about subsidies and tax transfers," he said, "but small farmers must have the right inputs when they need them. The government has to intervene in the credit system to enable them to buy technology, and the parastatals

must play a part in the supply."

Unlike their large-scale counterparts, small farmers need the government to be the intermediary to technology. "If we don't get technology to them, we will have social chaos, and this would not be good for the small farmer, the big farmer or the urban consumer," he said.

Despite these problems, Borlaug points to spectacular successes in Latin American agriculture. In particular, he pronounces himself "fascinated" by the transformation of Brazil's *cerrado* into one of the world's great producers of soybeans, corn, rice and other crops.

A region of very acidic soils with a high aluminum content and low nutrients, the *cerrado* was left on the margins of agriculture. Then researchers, including some with the IDB-supported Brazilian agency EMBRAPA, bred aluminum-resistant varieties of soybeans and rice. The roots of the new varieties were able to penetrate deep into the soil, where applications of lime could not reach. When the roots decomposed, they improved the soils.

Through the successful application of this new technology, 10 million hectares of *cerrado* have been put into production and Brazil has emerged as the world's second largest producer of soybeans.

"I never thought it could happen," said Borlaug.

—the editor



*Budding computer scientists at the
Costa Rican Technological Institute.*

COSTA RICA

A high-technology incubator

Long-standing education policies yield big dividends

by Paul Constance

When Intel Corporation announced that it had selected Costa Rica as the site of a new \$300 million microprocessor plant last November, many observers thought the Central American country had pulled off an incredible marketing coup.

After all, Costa Rica was the smallest contender in a fierce competition for the plant that initially included the United States, Brazil, Mexico, Malaysia, Thailand, Chile, The Philippines, Ireland, Israel and Puerto Rico. At stake were some 3,500 jobs that would be generated by the 400,000 square foot plant and its suppliers, plus billions of dollars in future export revenues.

But although government and business leaders in San José did run an intensive campaign to attract Intel during 1996, the effort to clinch the largest foreign investment in the country's history actually began three decades ago. That is when Costa Rican government leaders began implementing policies to improve technical and scientific education—policies that have since become one of the country's hallmarks.

Speaking to reporters after the Intel announcement, Costa Rican President José María Figueres said "this [investment] amounts to an international recognition of our health system, our public education system... and our extraordinary communications services, of the efforts we have made in these areas over many decades and of the infrastructure we have managed to build."

Figueres' remarks were echoed by

Intel executives themselves. "Intel chose Costa Rica in part because of its excellent educational system," Corporate Vice President Mike Splinter said during groundbreaking ceremonies for the plant near San José last April.

When the project was announced last year, Intel's vice president for manufacturing and technology, Frank Alvarez, specifically cited the high level of computer literacy and English-language ability among



C&I PHOTOGRAPH, INC.

Intel required a computer literate workforce.

Costa Rica's high school and college graduates. He also praised Costa Rica's telecommunications infrastructure and its incentives for foreign investors as key factors in the final decision.

Alvarez said Intel was satisfied that Costa Rica would be able to supply educated workers for the four job categories that will be used at the plant. The most basic category, a technician, requires a high

school diploma. Maintenance personnel need at least two years of post-high school technical training, and engineering and management positions require college-level engineering or science degrees.

The fruit of foresight. According to Román Mayorga, IDB technology and education specialist, Costa Rica is a striking example of how even a small country with limited resources can become competitive in science and technology.

"Costa Rica defies the conventional view that small countries simply can't afford to develop science and technology sectors," he said.

"The Intel project is the culmination of a deliberate policy process that began in the 1960s, when Costa Rica defined priorities and decided to invest heavily in its human resources, with a particular emphasis on technical education."

Mayorga said Costa Rica sought the IDB's assistance in developing science and technology on several occasions. In 1974, for example, two years after it created the National Council for Scientific and Technological Research (CONICIT), Costa Rica requested and received \$3.3 million in IDB financing to expand the Costa Rican Technological Institute (ITCR), in Cartago. The ITCR now has one of Latin America's most advanced computer science and software engineering departments, a factor that contributed significantly

to Intel's decision, according to Mayorga (see sidebar, page 7).

In 1978, the IDB lent Costa Rica \$30 million to help finance a program to decentralize and expand its higher education system. The funds were used to build regional centers focused on agricultural and technical training and expand ITCR's central campus. That was also the year in which Costa Rica adopted its first

(continued)



Employees at CIBERTEC, a Costa Rican telecommunications equipment firm, assemble circuit boards.

(from previous page)

science and technology program as part of a national five-year development plan.

In 1983, Costa Rica's Omar Dengo Foundation, with help from the government, the United Nations Development Programme, the U.S. Agency for International Development and the IDB, launched a program to promote computer literacy and reasoning skills in elementary schools. The result has been the installation of computers and com-

puter science curricula in more than half of all primary schools and nearly all high schools.

"Thanks to these efforts, Costa Rica now has one of the highest levels of computer literacy in the region," said Mayorga.

Most recently, Costa Rica concluded a Science and Technology Program, partly financed by the IDB, that funded 239 post-graduate scholarships, 90 research and development projects and a variety of laboratory and computer equipment

at 16 research facilities. Many beneficiaries of that scholarship program now teach in Costa Rican technical institutions, and several have gone on to start successful technology companies (see page 7).

Lessons for others. Given the considerable disagreement among policymakers over how small countries should promote science and technology development, it is worth asking if the Costa Rica experience holds lessons that can be applied

The IDB and science and technology

The IDB has supported the development of science and technology in its member countries since the 1960s, although the nature of its efforts in this area has evolved considerably through the years.

From 1961 to 1987, Inter-American Development Bank funding for science and technology focused almost entirely on building up capacity in Latin America's universities and research institutions. Some 20,000 Latin American researchers were trained with IDB-funded scholarships during this period. In addition, at least 100 major science and technology institutions received IDB

funds for infrastructure, equipment and other improvements.

From 1988 to 1996, the Bank focused its lending resources on consolidating the region's science and technology institutions and helping them to develop productivity-enhancing services for local industries. Technology development funds were set up in Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Uruguay.

The cumulative effects of these measures, though hard to measure, are evident in dozens of advances throughout the region. In Argentina, IDB science funding contributed to

the development of a biotherapeutic milk product for children suffering from diarrhea. In Brazil, the IDB helped fund genetically engineered varieties of soybeans and sugar that are now widely in use. In Chile, researchers developed computer software for managing open-pit mining operations. In Uruguay, the Bank supported the design and testing of an innovative device for preventing frost damage to crops.

 For more information on IDB science and technology projects, look under the "Projects" button on the Bank's home page, www.iadb.org.

elsewhere. According to Mayorga, Costa Rica offers a good example of a national science and technology strategy that focuses on a few priority areas and sets short-, medium- and long-term goals.

"Small countries sometimes make the mistake of trying to advance science in too many areas. They often end up producing mediocre scientists in areas that are irrelevant to the country's industries," Mayorga said. "Costa Rica decided early on to focus on information technology, environmental sciences and applied technology for the agricultural and forestry sectors.

"Today you can see the benefits of that approach. In addition to the Intel project, you have a number of local software companies in Costa Rica, and the country is recognized globally as a leader in environmental issues and ecotourism. You also have highly respected research centers—like the ITCR and the Tropical Agronomy Research and Teaching Center—that have a very productive relationship with local industry."

Costa Rica has also done a good job of balancing investments with long-term returns, such as basic education, with those that have short-term payoffs, such as technological extension services. "This approach is not very different from what some of the small and medium-sized countries in East Asia have done in the last 25 years," Mayorga added.

Moreover, Costa Rica shows that science and technology development in a small country need not come at the expense of more basic and immediate social needs. "Starting with very low levels of science and technology spending—even less than half of a percent of GNP per year—it is not impossible for an economy growing at several GNP percentage points per year to provide the necessary resources," concluded Mayorga.

As Costa Rica demonstrates, smart modest investments can yield spectacular long-term returns.

From the classroom to the boardroom

Carlos Araya is the founder and chief executive of ArtInSoft, a software design and consulting company in Cartago Costa Rica; that has twice won the country's national prize for technology innovation. He is also an associate professor in the computer science department of the Costa Rican Technological Institute (ITCR) and a member of the Class of '78—the first to graduate with computer degrees from ITCR. As such, Araya exemplifies the benefits of ITCR's deliberate focus on applied research and cooperation with industry.

Araya started ArtInSoft in 1993 after receiving a doctoral degree in artificial intelligence at the University of Kansas on a Fullbright Scholarship. He launched the company with three ITCR graduate students and has continued to use his alma mater as a source of top-flight employees. Today, 40 of ArtInSoft's 45 employees are ITCR graduates or students.

ArtInSoft specializes in three fields: software "reengineering," where old software applications are adapted to run on new computers; industrial automation software, which helps manufacturers increase production efficiency; and designing Internet applications for the World Wide Web. Eighty percent of the company's customers are in Costa Rica, and 1997 sales are expected to reach \$2 million.

Founded in 1975, ITCR's Computer science department now has more than 1,000 students and 60 full-time professors, including 12 PhDs. Luis Montoya, director of the Computer Research Center at ITCR, said researchers at the institute are

encouraged to "sell" their research ideas to local private companies. "Basically, we sell what we produce," he said. "The financial aid for most of our research comes from the private sector."

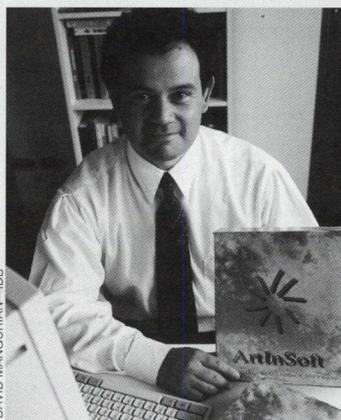
That relationship with the private sector seems to have impressed Intel Corp. executives who visited ITCR last year, while evaluating Costa Rica as a site for the new plant. "They looked at our curriculum and asked questions about our research projects and what we were

doing for private sector companies," Montoya recalled. "I think they liked what they heard."

After they selected Costa Rica, Intel executives asked two ITCR computer experts and two teachers from local vocational schools to visit the company's manufacturing facilities in Santa Clara, Calif., and Chandler, Ariz. Based on conversa-

tions with engineers and factory machine operators, the ITCR has designed a special two-year training program to supply workers for the new Intel plant. The program will train high school graduates in specific electronics, computer, industrial production and industrial maintenance skills required by Intel. "The microelectronics factory worker is very specialized," said Carlos Acuña, a professor of quality control and simulation at ITCR who visited the Intel plants. "There are going to be some radical changes in the way we train technicians as a result of the Intel project."

—reported by David Mangurian



DAVID MANGURIAN—IDB

Araya: software maven.

 For more information see the ITCR website at www.cic.itcr.ac.cr

TRENDS

Does globalization hurt wage earners?

■ As the world economy has become increasingly tightly knit over the past decade, the wage gap has widened between high-skilled and low-skilled workers. It would seem safe to conclude that the two trends are linked.

No, but lack of skills does Not so, according to a new paper presented at the IDB's Washington, D.C., headquarters. According to the study "The Effect of Globalization on Wages in the Advanced Economies," by International Monetary Fund economists Matthew J. Slaughter and Philip Swagel, globalization has had only a modest effect on wages. The major culprit is technology, which has led to a pervasive shift in demand for skilled labor.

In the study, which was carried out in the advanced economies, the authors conclude that the "consensus of empirical research suggests that increased trade accounts for only about 10 to 20 percent of the changes in wages and income distribution."

According to the study, the 1980s and 1990s has seen a technology-driven shift in labor demand away from less skilled workers and toward more skilled workers. "This shift has resulted in increased wage inequality in some countries, and in lower relative employment among unskilled workers in others," says the study.

The authors also find that increased capital mobility, including the outsourcing of production to low-wage countries, together with immigration from developing countries to the advanced economies, appears to have had only a modest effect on labor markets. Nonetheless, further globalization could contribute to greater job insecurity, they say. "Policymakers must keep in



Low-skilled workers need training to compete in the global economy.

mind potential social dislocations from these changes and ensure that those who are displaced do not become marginalized."

Policy actions must not impede adjustment, they continue, but rather provide incentives for workers and companies to adjust to and gain from changes in the global economic environment.

Agriculture in an open market

■ Researchers have devoted considerable attention to analyzing the impact of macroeconomic policy reforms on stabilization in Latin American countries. But until

Farmers struggle to adapt

recently, relatively little has been known about the effects of these reforms on the agriculture and the rural sectors. The International Food Policy Research Institute (IFPRI) is now seeking to fill the gap through its research program, "Macroeconomic Policy Reforms and

Regional Trade Pacts in Latin America."

Policymakers will use data generated by the IDB-financed program to gauge the effects that changes in the world trading system and regional integration schemes have on agriculture and the rural economy.

Data already on hand indicate that the dramatic Mexican devaluation of 1995 caused serious strains in the country's agriculture sector. The program also found that U.S. policies to help Mexico make a "soft landing" would help shield that country's agriculture sector, resulting in less migration to the United States.

In Argentina, preliminary studies indicate that the elimination of subsidies following the creation of Mercosur (the integration agreement between Argentina, Brazil, Uruguay, and Paraguay) hurt many smaller farmers. To ease the transition to more open markets, the IFPRI program concludes that the government should have provided more inputs to the threatened farmers.

The IFPRI project is also analyzing the effects of NAFTA and U.S. agricultural policy on agriculture in the Americas.

OPINION POLLS

A verdict on democracy

Long-term support tempered by local disappointment

Latin Americans overwhelmingly prefer democracy over authoritarianism as a form of government. But at the same time, they are largely dissatisfied with the performance of their own democratic governments.

These seemingly incompatible perceptions about the benefits of democracy were among the findings of a comprehensive 1996 survey of attitudes on government, politics and the economy in 17 Latin American countries conducted by Latinobarómetro, a private polling organization based in Santiago, Chile.

Good for the other guy. The survey results, which were recently presented at IDB headquarters, offer some fascinating glimpses into the perceptions of people who have lived through a period of great social and economic change.

The survey showed that even in countries where a strong majority prefers democracy, a significant minority would choose an authoritarian regime under certain circumstances. That minority is 26 percent of the population in Paraguay, 24 percent in Brazil, 23 percent in Chile and Mexico and 21 percent in Guatemala.

According to Latinobarómetro, Costa Rica and Uruguay stand out as the countries where democracy enjoys the highest level of support—80 percent. With one exception, at least 50 percent of citizens in every other surveyed country also prefer democracy. In Honduras, only 42 percent of those surveyed favor democracy, while close to 30 percent said they do not care what kind of government they have and 14 percent said an authoritarian regime could sometimes be preferable.

Surprisingly, favorable opinions of democracy did not translate into approval of the local state of affairs.

In all but two of the surveyed countries, less than 34 percent of respondents answered “yes” when asked if they were satisfied with democracy as it functions in their own country. Only in Costa Rica (51 percent) and Uruguay (52 percent), did more than half answer yes.

According to Marta Lagos, director of Latinobarómetro, many respondents to the latter question were actually issuing a verdict on the performance of the government currently in power, a bias that might help explain the apparent contradiction in respondents’ view of democracy.

Many observers believe these responses underscore the importance of accelerating so-called “second generation” reforms in the region. If income distribution were more equitable, judicial systems more efficient

and independent, and politicians more accountable, public perception of the local functioning of democracy would probably improve.

Useful data. Latinobarómetro’s findings have been used by the IDB in several of its studies, notably in the research papers presented in the seminar “Latin America After a Decade of Reforms: What Comes Next?” that took place last March at the Bank’s annual meeting in Barcelona. Highlights of those papers were featured in the May issue of *THE IDB*.

Regional surveys are increasingly being used by researchers and policymakers, according to Liliana Rojas-Suárez, principal advisor in the IDB’s Office of the Chief Economist. The Bank, for instance, is presently carrying out studies on urban violence and corruption that use opinion polls findings.

—by Samuel Silva

 For further information, contact Marta Lagos at (56-2) 235-0574.

People prefer democracy to authoritarianism*

Uruguay	80%	Nicaragua	59%
Costa Rica	80%	Paraguay	59%
Panama	75%	El Salvador	56%
Argentina	71%	Chile	54%
Bolivia	64%	Mexico	52%
Peru	63%	Guatemala	51%
Venezuela	62%	Brazil	50%
Colombia	60%	Honduras	42%

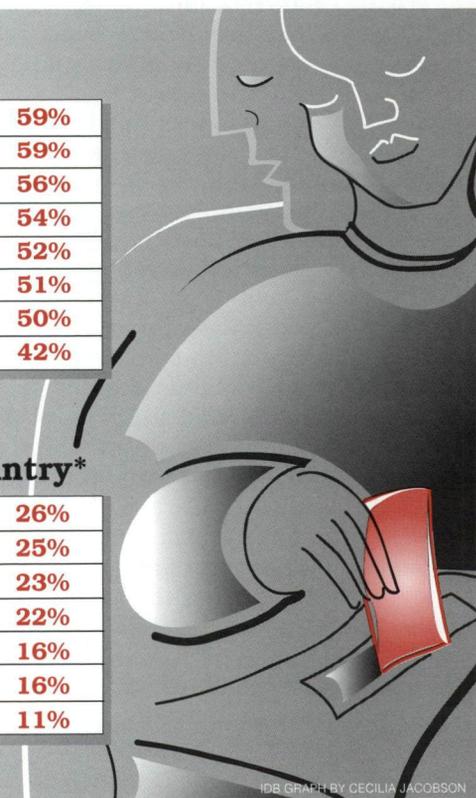
* Percent of respondents preferring democracy.

...but are dissatisfied with democracy in their own country*

Uruguay	52%	El Salvador	26%
Costa Rica	51%	Bolivia	25%
Argentina	34%	Nicaragua	23%
Ecuador	34%	Paraguay	22%
Venezuela	30%	Colombia	16%
Peru	28%	Guatemala	16%
Chile	27%	Mexico	11%

*Percent satisfied with democracy.

Source: Latinobarómetro



IDB GRAPH BY CECILIA JACOBSON

PRIVATE SECTOR

IDB approves first partial risk guarantee

New service could increase flow of private financing

The Inter-American Development Bank has added another instrument to its growing list of financial facilities to support the private sector in Latin America and the Caribbean: partial risk guarantees.

A \$31.25 million partial risk guarantee was approved in April by the IDB Board of Executive Directors for senior debt noteholders investing in Bogotana de Aguas y Saneamiento S.C.A., E.S.P., a company that will build a wastewater treatment plant serving the metropolitan area of Bogotá, Colombia.

The operation is both a first for the IDB, and also the first partial risk guarantee made by a multilateral development bank without a sovereign government counter-guarantee, according to Blair Thomas, the IDB project team leader.

Private financiers have long maintained that they would invest more in the region if the IDB could reduce risks for an investment project in circumstances in which no other organization has this capability.

The IDB can "mitigate discreet risks that no other party can because of its preferred creditor status," Thomas said. "When we cover these risks, we unlock the entire financial package and make it work."

The IDB partial risk guarantee, which ensures compensation to some of the senior debt noteholders in the event of an early termination of the concession or in case of restrictions on foreign exchange convertibility or transferability, was a key to putting together the first phase of an investment in Bogotana de Aguas sponsored by the French firm Lyonnaise des Eaux. The firm may eventually complete an \$800 million investment program in the

Bogotá area with the help of additional IDB financial support.

For the time being, IDB guarantees are expected to be used only when specific circumstances call for this type of operation, according to Thomas. The amount of the IDB guarantee is charged against the Bank's ordinary capital, the same as if it were a loan, and cannot exceed 25 percent of total financing for a private sector project.

"Based on the experience gained in this project, we are looking at ways to enhance the guarantee program," Thomas says. "It has the potential of becoming a much more widely used financial instrument."

—Daniel Drosdoff

 For more information, go to <http://www.iadb.org/prensa/1997>.

MERCOSUR

Integration reality check

Trade pact faces challenges

Mercosur has successfully expanded trade and investment among Argentina, Brazil, Paraguay and Uruguay, but the trade pact faces big challenges in the future, according to a report by the Institute for the Integration of Latin America and Caribbean (INTAL).

Trade within Mercosur has grown to \$16 billion a year, or one-fifth of the total external trade of all its member countries. However, intra-Mercosur trade has not yet reached its full potential, particularly if compared with Southeast Asia, according to the first report on the trade pact by INTAL, an IDB affiliate

based in Buenos Aires. The report was the subject of a recent seminar at the Bank's Washington, D.C., headquarters.

According to Roberto Bouzas, coordinator of the INTAL report, the trade pact's initial success has been due to the natural partnership between its member countries that "was repressed during several decades by (protectionist) policies."

Mercosur was also helped by the fact that its four member countries have followed similar macroeconomic policies during the past four to five years and by their decision to use automatic mechanisms to govern the process of trade liberalization, leaving negotiations only for exceptional cases.

But the job of sustaining a common market is not easy. "Mercosur is reaching a point where institutional and organizational issues are becoming the key," said Bouzas. Some trade pact policies are not working as expected and need to be more efficiently implemented. For instance, tariffs are charged twice—when a country imports a product from outside Mercosur and then re-exports it to another Mercosur member country. And information sharing among member countries is still very limited.

 For more information about this report and INTAL, go to the "Departments" section of the IDB's home page (www.iadb.org).



Many miles to go for Mercosur.



Microentrepreneurs address first ladies at the Costa Rica seminar.

COSTA RICA

The gritty reality of microenterprise

First ladies get views from the grassroots

The theory and practice of microenterprise came face-to-face in Costa Rica last month at a seminar co-sponsored by the IDB and the United States Agency for International Development (USAID).

At the "Regional Consultative Forum on Microenterprise: Lessons and Opportunities" held May 8 and 9 in San José, U.S. first lady Hillary Rodham Clinton, her counterparts from the countries of Central America and Belize, and several development experts spoke on the importance of supporting microentrepreneurs, but only after hearing Berta Alarcón de Castillo describe the gritty reality of raising a family and running a business on a shoestring.

Alarcón, a 37-year-old mother of three who owns five kiosks in San Salvador, El Salvador, told seminar participants how she began selling nail files on the street when she was 12 years old. She gradually taught

herself how to read and write, and then set up a stall to sell clothing and other goods. In 1988, with a \$200 loan from Financiera Calpia, a finance company in San Salvador supported by the Multilateral Investment Fund, Alarcón expanded into shoes. Her repayment record on subsequent loans was so good that last year she was able to borrow \$5,000 to further expand her business, now named "Calzados Berta."

"We are able to walk on our own," Alarcón said, "but we still occasionally need a hand for support."

Alarcón and two other microentrepreneurs, one from Guatemala and one from Costa Rica, spoke to an audience of 500 that included Clinton and the first ladies of Nicaragua, Costa Rica, Guatemala, Honduras and Belize. Also participating were IDB President Enrique V. Iglesias, Marguerite Berger, chief of the IDB's Microenterprise Unit,

Mark Schneider, USAID assistant administrator for Latin America and the Caribbean, and the directors of several leading nongovernmental organizations that specialize in microenterprise development.

The seminar was marked by a tone of candid pragmatism, according to Berger. "There aren't many occasions when donors, program managers, institutions and actual microentrepreneurs get together to exchange ideas," said Berger. "Our aim was to cut through all the layers of bureaucracy and bring people together to share experiences."

In her address, Clinton spoke of the particular importance that microcredit has for women. Microcredit "is a stroke of genius," she said, "precisely because it brings out into the open and builds on skills that are already there, but which for too long have gone unrecognized by governments, banks and international aid organizations."

Clinton also said that microcredit "is of special benefit to women," because it is one of the "tools of opportunity" that, along with health care, legal protections and education, can unleash women's productive potential. "By offering new opportunities, it moves us all closer to making real the dream of equality," she said.

Workshops during the seminar offered practical advice on expanding a microenterprise, how to obtain financing and other services for a fledgling business, and how microentrepreneurs can contribute to community development.

The workshops drafted recommendations on improving microentrepreneurs' access to information on markets and supplies, providing credit at the start-up stage of small ventures, offering training programs for established entrepreneurs and increasing nonfinancial services for these businesses.

 For more information, go to <http://www.iadb.org/sds/mic/eng/index.htm>; or contact María Fernández Jaramillo at (202) 632-1766.



DAVID MANGUIRIAN—IDB

The U.S. first lady admires Sandoval's handiwork.

COSTA RICA

Wedding bells ring up sales

Although Glenda Sandoval Rodríguez is accustomed to receiving compliments for her work, she never imagined that the accolades would one day come from the first lady of the United States.

A 40-year-old seamstress from Costa Rica, Sandoval specializes in bridal gowns, veils, and related accessories. She met Hillary Rodham Clinton in an exhibition at the Omar Dengo School in San José on May 8 that was held in conjunction with a microenterprise forum organized by the IDB. Seven other Costa Rican microentrepreneurs also participated in the event, which was organized by the IDB and USAID. The microentrepreneurs showed their work and discussed their busi-

nesses with Ms. Clinton and the first ladies of Honduras, Guatemala, Nicaragua, Belize and their hostess, Costa Rican first lady Josette Altmann de Figueres.

That recognition was the unexpected culmination of a long and arduous road for Sandoval. Born in Nicaragua, she migrated to Costa Rica at the age of 14 with her one-year-old baby. She worked first as a domestic servant and then in a restaurant. In 1977 she borrowed a sewing machine from a friend and made a few embroidered bridal headpieces. Sandoval took the samples to variety stores, and to her surprise, orders started coming in. She delivered the orders promptly, and her business has grown ever since.

"As soon as I'd sell something, I'd buy more material," Sandoval recalled. "When my husband [a shoemaker] saw that we were making more money from my business than from his, he closed his shop and joined me."

For six years Sandoval continued to "rent" her friend's sewing machine. She started taking night classes in sewing design and gradually expanded her offerings to include bridal bouquets and party dresses. Finally, her savings allowed Sandoval to buy a Singer sewing machine and set up shop in the back of her house. In 1986 she got a short-term loan from a local nongovernmental organization, Avance, which she used to travel to Mexico and buy better quality cloth at a lower price.

Sandoval's business continued to grow. In 1993, a \$3,000 loan from Credimujer, an IDB-supported NGO, allowed Sandoval to purchase enough materials for two years of work. Today Sandoval's sales average \$1,500 per month. "Eventually," she said, "I'd like to open my own bridal salon in San José."



DAVID MANGUIRIAN—IDB

Sandoval in her workshop.

CHILE

World-class hospital

Southern Chile's legendary earthquake of 1960 killed hundreds of people and damaged countless buildings, including the Regional Hospital of Valdivia, where the three top floors of the eight-story building had to be closed.

Today, a state-of-the-art hospital has finally replaced temporary facilities that were built in the aftermath of the earthquake. The new hospital was one of four in northern, central and southern Chile built partly with funds from a \$70 million IDB health services loan approved in 1991.

Completed early last year, the new Regional Hospital of Valdivia expanded its capacity from 529 to 649 beds, according to Fernando Román, an architect with the Chilean Ministry of Health who oversaw the project. "In the process we replaced practically all of our old medical equipment with state-of-the-art technology," he said.

The hospital now boasts a burn treatment unit, a neonatal facility capable of providing intensive care for up to 41 premature babies, and one of Chile's most advanced oncology centers, among other specialized capabilities. It also has an impressive collection of medical imaging systems, including a magnetic resonance imaging machine and sophisticated x-ray diagnostic equipment.



Productive once again: new machinery and fertilizers fueled the revival of Guyana's sugar cane industry.

GUYANA

Sugar and rice output booms

Seven years ago, the economy of Guyana was in a shambles. Sugar and rice production, which accounted for half of the country's exports and foreign exchange, had dropped by half in just four years. One-fourth of the country's agricultural equipment and machinery was out of commission due to lack of foreign exchange to buy spare parts.

It was a vicious circle: the lower the production and exports, the less foreign exchange was available to buy spare parts and machinery, further reducing production.

In 1990, the IDB stepped in to help break the cycle with a \$26.2 million emergency loan to revive the country's rice and sugar production. Guyana used the resources to buy 525 tractors, 33 combines, 107 motorcycles, 311 other pieces of farm equipment, spare parts and agrochemicals from Brazil, France, Switzerland, the United Kingdom and the United States.

At the same time, Guyana's government enacted a number of agricultural, banking and export policy reforms that turned over the management of government-owned sugar estates to a private firm and privatized the public rice milling operations.

The combined effects of the new equipment and the reforms were dramatic. Rice and sugar exports both have increased more than 260 percent since 1990. Sugar yields per hectare have increased 25 percent and rice yields, 31 percent.

"There is little doubt that the provision of inputs from the IDB loan resulted in increased production that is still continuing," says Charles Kennard, chairman of the Guyana Rice Development Board.

The revival of Guyana's rice and sugar industry had a significant effect on

the country's economy. Production, which had been declining an average of 2 percent a year from 1985 to 1990, has grown an average of 7 percent annually since 1991.

The loan had other effects. According to a recent IDB report, the avail-

ability of foreign exchange increased competition among importers and distributors, resulting in more goods on the market and generally lower prices.

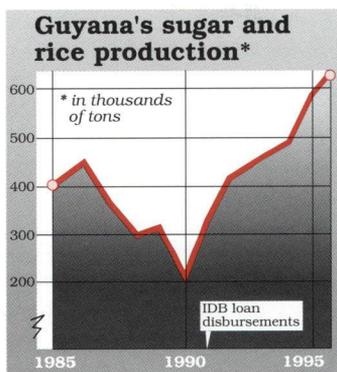
Before 1990, two distributors controlled 90 percent of the market for agricultural inputs and offered only three brands of tractors for sale. By 1994, according to the report, 16 distributors were selling eight tractor brands. The greater availability of spare parts caused mark-ups to drop from nearly 100 percent to 44 percent and "prices either fell substantially or remained

static," states the report.

During the early stages of the project, officials determined that the lack of foreign exchange was not the only factor constraining sugar and rice production. Lack of readily available credit for farmers was also a problem.

"Farmers were required to pay distributors for inputs at the time of delivery," the report notes, "and they were finding it hard to make this full payment immediately. Distributors only imported equipment after they obtained a firm commitment from farmers to purchase the items."

The IDB's Guyana office worked with government officials to eliminate bottlenecks and increase the role of the private sector in providing credit. "We designed a new system to help farmers get credit without changing the Bank's procedures for carefully reviewing public bidding and disbursements," says Charles Greenwood, the Bank's Guyana representative. "If we hadn't done this, the program probably would have been cancelled," he concluded.



LOANS

Bolivia. . . \$7 million from the Fund for Special Operations to improve public investment programming and



preinvestment management at the departmental and municipal levels.

The project, to be carried out by the Secretaría de Inversión Pública, will help implement the National Public Investment System, which will demand efficiency in the programming of public investments. The project will include Bolivia's nine departments and 11 of the principal municipal governments, including all departmental capitals.

Costa Rica. . . \$28 million to improve the quality, efficiency, and equity of preschool and lower secondary education.

The project will expand

INFORMATION ON IDB PROJECTS

 More details about these projects, including press releases, project summaries and related papers, are available electronically through the IDB's Internet home page (<http://www.iadb.org>). Check under the Press Services, Publications and Project Documents sections.

IDB Projects, a monthly compendium of planned projects and related opportunities to supply goods and services, is also available on the home page, under the Business Opportunities heading. For a sample copy of the print edition of *IDB Projects*, call (202) 623-1397, or fax x1403.

preschool education in low-income urban and rural communities and broaden coverage in rural areas for grades seven through nine, known as the "third cycle."



The resources will help the Ministry of Public Education to expand kindergarten coverage by 5,880 pupils per year and "third cycle" coverage by 9,067 pupils per year, while reducing dropout

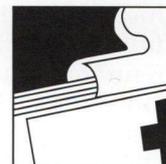
and repetition rates in rural areas.

Jamaica. . . \$10 million to finance infrastructure and social assistance projects benefiting low-income groups.



The resources will support a \$50 million program, to be carried out by the Jamaica Social Investment Fund, that will provide short- and medium-term benefits to the poor. Projects to be financed include social infrastructure, such as schools, community centers, and health centers; economic infrastructure, including roads and agroprocessing facilities; and social assistance, such as career guidance and job placement for youth, and parenting and family life education.

Paraguay. . . \$39 million to support a health sector modernization and reform program.



The program will address one of the country's

main health problems—a high rate of maternal and perinatal mortality—while supporting the first phase of a health sector modernization process that aims to achieve better quality services, more efficiency, and greater social equity.

The program will include mechanisms to improve resource allocation and managerial skills within Paraguay's Ministry of Public Health and Welfare. Primary health care will be improved through training and human resources development, rehabilitation of infrastructure and equipment, and reforms to the patient referral system. The total cost of the program is \$46.6 million.

TECHNICAL COOPERATION

Regional. . . \$1,850,000 to support a management and public policy training program for civil servants at the professional and managerial levels in Latin America and the Caribbean.



The resources will finance some 54 full scholarships for masters degrees in management and public policy under the auspices of the Industrial Engineering Department of the University of Chile. Preference for these scholarships will be given to civil servants from countries that are classified as relatively less developed and having limited markets.



LUIS FORTILLO—IDB

Honduran President Carlos Roberto Reina met with IDB President Enrique V. Iglesias and other Bank officials in May to discuss his country's development programs.

MULTILATERAL INVESTMENT FUND

Brazil. . . \$1.14 million to the state of São Paulo to support institutional and regulatory changes that will permit greater private investment in the transportation sector.



The resources will finance the consolidation of the institutional and regulatory framework for the highway concession program and strengthen the state's Transportation Concession Commission.

Peru. . . \$1.3 million in nonreimbursable financing to promote private sector participation in the construction and operation of highways under a concession system.



The program, to be carried out by Peru's Comisión de Promoción de Concesiones Privadas, will establish the legal and administrative framework for the concession system.

Uruguay. . . \$1,025,000 to attract private investment in infrastructure by strengthening the concession system for public works and services.



Funds will be used to enhance the legal and operational instruments of the existing concession system and strengthen the capacities of government agencies.

Regional. . . \$1.65 million to support nontraditional job training for low-income women in four Caribbean countries.



Educational institutions and nongovernmental women's organizations with track records in technical and vocational training will carry out the program in Belize, Guyana, Jamaica, and Trinidad and Tobago.

The program will benefit 1,000 low-income women who are heads of households by training them in areas such as construction, carpentry, plumbing, and auto mechanics.

INTER-AMERICAN INVESTMENT CORPORATION

Argentina. . . \$10 million to Dominión Nonwovens Sudamericana, S.A., to help finance the construction of a plant to produce nonwoven textiles used in the manufacture of disposable baby diapers.



The company will purchase state-of-the-art equipment that will allow it to substitute imports, which currently make up about 15 percent of national consumption. The total cost of the project is \$44.7 million.

Mexico. . . A \$3 million equity investment to help establish the Mexico Private Equity Fund.



WILLIE HEINZ-IDB

Rut prevention

Workers in Paramin, Trinidad and Tobago, help pave a road partly financed by a \$31.5 million IDB loan approved in 1992. The road will make it easier for local farmers to get produce to market during the rainy season.

The five-year fund, which has a target initial closing of \$30 million, will provide investment capital for between 12 and 15 small and medium-sized export-oriented businesses located in northwestern Mexico that plan to expand operations in manufacturing, agribusiness, and consumer goods.



Trinidad and Tobago. . . \$2.5 million loan and \$1.5 million equity investment for Mora Oil Ventures Limited to help expand and improve the company's offshore oil



platform. The investment will support a small, locally owned oil and natural gas producer in an industry dominated by large multinational firms.

Regional. . . A \$5 million equity investment to help establish a \$50 million fund that will invest in private financial institutions on a medium- and long-term basis.



The Inter-American Capital Fund will take equity positions in a portfolio of small and medium-sized private financial institutions with a good market niche, professional management, and promising growth prospects.



ROBERT J. DEAL JR.

Underwater architecture: dozens of species depend on coral reefs for food and shelter.

ENVIRONMENT

Cities under the sea

Coral reefs set an example for urban areas

They are powerful and at the same time beautiful, full of high-rise constructions. They have millions of inhabitants and are complex centers of diversity, of cultural clashes as well as collaboration. They are dangerous and seductive, a universal object of fascination.

Can anyone deny that most of what can be said about a city can also be said about a coral reef?

That was the point made by reef expert Robert Ginsburg of the University of Miami's Rosenstiel School of Marine and Atmospheric Science at a recent presentation at the IDB's Washington, D.C., headquarters. Ginsburg, who chairs the Organizing Committee for the International Year of the Reef (1997), was the featured speaker at the Bank's May Forum of the Americas luncheon.

Reefs are valuable for a variety of reasons. They provide protection for shorelines and serve as a source of food. They are also one of the main tourist attractions in much of Central America and the Caribbean.

"I propose that we place a monument somewhere in this region to these little polyps that are no bigger than the head of a pencil, and yet are responsible for these remarkable edifices," said Ginsburg.

In many respects, corals are like buildings, according to Ginsburg. In reefs, he said, "the apartment dwellers actually build their own apartments, they keep building new ones, and they use sea water: it's a developer's dream."

No housing problems. The corals are like the bricks in a building, held together with calcium carbonate, an organic cement secreted by algae. The sand produced by the disintegration of reefs fills in the whole structure, resulting in a solid mass of wave-resistant buildings.

Corals also use algae in their tissue, both to provide food as well as to take care of their waste products, turning carbon dioxide into oxygen.

Like cities, coral reefs need pure water. In coral reefs, the water puri-

fiers are the sponges; they pump water equivalent to thousands of times their own volumes each day, simultaneously filtering out what they need for food and at the same time removing impurities.

Reefs also have gardeners, explained Ginsburg. Damselfish tend lawns of algae, guarding them jealously and farming them by removing the algae they don't want and keeping the ones that they use for food.

"Reefs are a kind of role model really for our cities," said Ginsburg. "They are enormously efficient in recycling. Everything that comes in is used over and over again. Instead of petroleum they use solar energy, and even their building material is renewable."

The bottom line of Ginsburg's presentation was, of course, conservation of coral reefs. "We are hoping that this Year of the Reef will allow us not only to gauge the conditions of the reefs in much the same way we screen the health of populations, but also to bring together researchers and governments responsible for these reefs throughout the region in a common effort to see that they're preserved."

—by Samuel Silva